RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER 2624

Attorney Docket No.: **09792909-6376**   PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:)
 	
    Shintaro Okada et al.)
 	
Application No. **10/553,085**)
 	
Filed: **October 11, 2005**)
 	
For: **SIGNAL PROCESSING DEVICE AND**)
    METHOD, RECORDING MEDIUM, AND
    PROGRAM
	Group Art Unit: **2624**
	
	Examiner: **Max Shikhman**

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RESPONSE TO OCTOBER 9, 2008 FINAL OFFICE ACTION

S I R:

This Response is filed in reply to the Final Office Action of October 9, 2008.
Applicant respectfully requests reconsideration of the application in view of the Amendments
and Remarks presented herein.

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IN THE CLAIMS

This listing of claims replaces all prior listings:

1. (Currently Amended)   A signal processing apparatus for adjusting levels of continuously arranged signals, said signal processing apparatus comprising:

a designation unit for designating the continuously arranged signals as a signal of attention one by one;

a determination unit for determining a predetermined number of signals preceding the signal of attention designated by the designation unit and a predetermined number of signals following the signal of attention, to be neighbouring signals;

a weight average unit for averaging by weight the signal of attention and the plurality of neighbouring signals;

flag setting unit for calculating a difference in levels between the signal of attention and a neighbouring signal, judging whether or not the difference is larger than a predetermined threshold value, and raising flags for the neighbouring signal and [[a]] another neighbouring signal, the two neighbouring signals which are arranged symmetrically with respect to the signal of attention, when the difference is judged to be larger than the predetermined threshold value; and

a control unit for controlling and causing the weighted average unit to average by weight, using the signal of attention instead of the neighbouring signal for which the flag is raised.

2. (Previously Presented)   The signal processing apparatus as described in claim 1, wherein said flag setting unit further raises a flag for a neighboring pixel away, in view of the pixel of attention, from the neighboring pixels raised with flags.

3. (Previously Presented)   The signal processing apparatus as described in claim 1, wherein said signals are pixel values of pixels constituting an image.

4. (Previously Presented)   A signal processing method for adjusting levels of continuously arranged signals, said signal processing method comprising:

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a designation step of designating continuously arranged signals as a signal of attention one by one;

a determination step of determining a predetermined number of signals preceding the signal of attention designated by way of the designation step, and a predetermined number of signals following the signal of attention, to be neighbouring signals;

a weight average step of averaging by weight the signal of attention and the plurality of neighbouring signals;

a flag setting step of calculating a difference in levels between the signal of attention and a neighbouring signal, judging whether or not the difference is larger than a predetermined threshold value, and raising flags for the neighbouring signal and a neighbouring signal which are arranged symmetrically with respect to the signal of attention, when the difference is judged to be larger than the predetermined threshold value; and

a control step of controlling and causing a process in the weighted average step to average by weight, using the signal of attention instead of the neighbouring signal for which the flag is raised.

5. (Previously Presented)   A computer readable medium storing a program for adjusting levels of continuously arranged signals, said program comprising:

a designation step of designating continuously arranged signals as a signal of attention one by one;

a determination step of determining a predetermined number of signals preceding the signal of attention designated by way of the designation step, and a predetermined number of signals following the signal of attention, to be neighbouring signals;

a weight average step of averaging by weight the signal of attention and the plurality of neighbouring signals;

a flag setting step of calculating a difference in levels between the signal of attention and a neighbouring signal, judging whether or not the difference is larger than a predetermined threshold value, and raising flags for the neighbouring signal and a neighbouring signal which are arranged symmetrically with respect to the signal of attention, when the difference is judged to be larger than the predetermined threshold value; and

a control step of controlling and causing a process in the weighted average step to average by weight, using the signal of attention instead of the neighbouring signal for which the flag is raised.

6. (Previously Presented)   A computer readable medium storing program for adjusting levels of continuously arranged signals, said program comprising:

a designation step of designating continuously arranged signals as a signal of attention one by one;

a determination step of determining a predetermined number of signals preceding the signal of attention designated by way of the designation step, and a predetermined number of signals following the signal of attention, to be neighbouring signals;

a weight average step of averaging by weight the signal of attention and the plurality of neighbouring signals;

a flag setting step of calculating a difference in levels between the signal of attention and a neighbouring signal, judging whether or not the difference is larger than a predetermined threshold value, and raising flags for the neighbouring signal and a neighbouring signal which are arranged symmetrically with respect to the signal of attention, when the difference is judged to be larger than the predetermined threshold value; and

a control step of controlling and causing a process in the weighted average step to average by weight, using the signal of attention instead of the neighboring signal for which the flag is raised.

REMARKS

Claims 1 – 6 are pending and under consideration in the above-identified application.

In the Final Office Action, Claims 1 – 6 were rejected.

In this Amendment, Claim 1 has been amended. No new matter has been introduced as a result of this Amendment.

Accordingly, Claims 1 – 6 remain at issue.

I.   Double Patenting

Claims 1, 4, 5, and 6 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1, 4, 10, and 11, respectively, of copending Application No. 10/805,207.

Without acquiescing in the merits of the rejection, Applicant reserves the right to file an appropriate Terminal Disclaimer upon the issuance of the '207 copending application. The rejection thus has been overcome.

II.   35 U.S.C. § 103 Obviousness Rejection of Claims 1, 2, 4, 10, 11, and 13

Claims 1, 2, 4, 10, 11, and 13 are rejected under 35 U.S.C 103 (a) as being unpatentable over Tsuchiya (U.S. Publication No. 2001/0038716) in view Nakajima (U.S. Publication No. 2004/0008902).

Claim 1 is directed to a signal processing apparatus.

In relevant part, Claim 1 recites:

> "…flag setting unit for calculating a difference in levels between the signal of attention and a neighbouring signal, judging whether or not the difference is larger than a predetermined threshold value, and raising flags for the neighbouring signal and another neighbouring signal, the two neighbouring signals arranged symmetrically with respect to the signal of attention, when the difference is judged to be larger than the predetermined threshold value…"

That is, a flag is raised for each of two neighbouring signals, symmetrically arranged about the signal of attention, when a difference in levels between the signal of attention and one of the neighbouring signals is larger that a predetermined threshold value.

This is clearly unlike Tsuchiya and Nakajima, taken singly or in combination with each other.

The Examiner acknowledged that Tsuchiya fails to disclose raising flags for the

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neighbouring signal and a neighbouring signal which are arranged symmetrically with respect to the signal of attention, but asserted that Nakajima allegedly does and points to paragraphs [0034] and [0042] for support.

However, Nakajima discloses in these two paragraphs that (emphasis added):

> "[0034] Moreover, pixels at point-symmetric positions about the watched pixel o are combined among the above peripheral pixels a to h. That is, peripheral pixels a and h, b and g, c and f, and d and e are respectively combined. Then, signals output from the comparators 11 are supplied to four AND circuits 12. *Thereby, the value "1" is output from the AND circuits 12 when both of absolute values of differences between level values of combined pixels and the watched pixel are smaller than the reference level Θ.*"
>
> "[0042] Therefore, in the case of the above embodiment, by combining pixels at point-symmetric positions about a watched pixel and using only pixels which are both selected and thereby performing the averaging operation, *an averaged signal phase is not deviated from the original position of the watched pixel* and moreover, the possibility that generated image edges are disordered can be canceled."

That is, Nakajima discloses that the value 1 is output (raising a flag) from the AND circuits 12 when both of absolute values of differences between level values of combined pixels at point-symmetric positions and the watched pixel are smaller than the reference level Θ and an averaging operation is performed, rather than raising flags for two symmetrically arranged neighbouring signals when the difference in levels between the signal of attention and one of the two neighbouring signals is judged to be larger than the predetermined threshold value, as required by Claim 1.

Thus, Tsuchiya and Nakajima may not properly be combined to reject Claim 1. Therefore, Claim 1 is patentable over these two references, as are dependent Claims 2 – 6, for at least the same reasons.

Accordingly, Applicant respectfully requests that these claim rejections be withdrawn.

III.   Conclusion

In view of the above amendments and remarks, Applicant submits that Claims 1 – 6 are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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